Amendments to the Claims:

1-5. (Previously Cancelled)

6. (Previously Amended) A method of feeding water to heat transfer surfaces of a falling film evaporator having vertical evaporation channels having upper and lower ends, the method comprising:

spraying drops of water with absorbed atmospheric gases to distribute the water over the upper ends of the vertical evaporation channels of the falling film evaporator;

simultaneously with the spraying, (1) separating the atmospheric gases from the water and (2) discharging the separated atmospheric gases such that the atmospheric gases are removed from the water and the water is distributed over the upper ends of the vertical evaporation channels;

evaporating the water from which the atmospheric gases have been removed in the vertical evaporation channels to generate water vapor with reduced atmospheric gas contamination; and,

discharging the water vapor with reduced atmospheric gas contamination from the lower ends of the vertical evaporation channels separately from the separated gases, whereby re-dissolution of the separated gases is prevented.

7. (Previously Amended) The method as defined in claim 6 further including:

collecting the sprayed droplets into a layer of water above the upper ends of the vertical evaporation channels;

separating additional atmospheric gases from the water layer;

feeding water from the water layer into the upper ends of the vertical evaporation channels.

8. (Previously Cancelled)

9. (Previously Amended) The apparatus as set forth in claim 10 wherein the vertical evaporating channels upper end arrangement is confined to a circular area and the chamber mounted to the vertical evaporating channels upper end arrangement is hemispherical.

10. (Currently Amended) An apparatus for removing dissolved atmospheric gases from water, the apparatus comprising:

a falling film evaporator which includes a plurality of vertical evaporating channels, the vertical evaporating channels having upper ends arranged in an evaporator channel upper end arrangement for receiving water to be vaporized, product vapor exiting from a lower end of the evaporator channels;

a chamber covering the evaporator channels upper end arrangement;

[[a]] at least one perforated plate mounted in the chamber above and separated from the evaporator channels upper end arrangement;

at least one spraying device disposed in the chamber to break the water into a spray of droplets, the spray of droplets being sprayed onto the plate, the water passing through perforations in the plate to the evaporator channel upper ends; and

at least one dissolved gas outlet from the chamber for removal of the atmospheric gases separated from the water droplets during spraying before the water droplets enter the evaporating channels, such that the product vapor has a lower concentration of atmospheric gases than the water.

11-13. (Previously Cancelled)